August 1976 Number 384-Part II

Solar-Geophysical Data comprehensive reports

Data for February 1976–January 1976 & Miscellanea

Explanation of Data Reports Issued as Number 378 (Supplement) February 1976

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Solar - Geophysical Data

NO. 384 AUGUST 1976

Part II (Comprehensive Reports)

DATA FOR
FEBRUARY 1976
JANUARY 1976
& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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No. 384

Issued in two parts

Hope I. Leighton, Editor

J. Virginia Lincoln, Director
Solar - Terrestrial Data Services Division

CONTENTS

Part I (Prompt Reports)

	Page
Index for 1975 and 1976	2
Data for July 1976	3-20
Data for June 1976	21-111

Part II (Comprehensive Reports)

Index for 1975 and 1976	2
Data for February 1976	3-14
Data for January 1976	15-24

INDEX FOR 1975 - 1976 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1975 Aug	Sep	Oct	Nov	Dec	1976 Jan	Feb	Mar	Apr	May	Jun	Jul
A.	Solar and Interplanetary Phenomena												
A.1	Sunspot Drawings	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.2a	Zürich Provisional Relative Sunspot Numbers R_Z	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7
A.2b	Zürich Final Sunspot Numbers R_Z	378A 6	378A 6	378A 6	378A 6	378A 6							
A.2c	American Relative Sunspot Numbers R_A	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7
A.3a	Mt. Wilson Magnetograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	374A 90	375A 84	376A 90	377A 86	378A 90	379A 88	380A 94	381A 92	382A 86	383A 88	384A 84	
A.3c	Kitt Peak Magnetograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	---	---	---	
A.4	H_α Spectroheliograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.5	Calcium Plage Drawings - McMath (or Catania)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.5a	Calcium Plage (McMath) and Sunspot Regions	374A 90	375A 84	376A 90	377A 86	378A 90	379A 88	380A 94	381A 92	382A 86	383A 88	384A 84	
A.5b	McMath Daily Calcium Plage Indices	374A 95	375A 90	376A 96	377A 92	378A 94	379A 93	380A100	381A 97	382A 91	383A 94	384A 90	
A.6	H_α Synoptic Charts	379B 14	380B 12	376A 27	377A 25	378A 27	379A 25	380A 33	381A 29	382A 25	383A 25	384A 23	
A.7b	Coronal Line Emission	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.7f	Helium D3 Chromosphere (Big Bear)	---	---	---	---	---	378A 23	379A 21	380A 30	381A 24	382A 21	383A 21	384A 19
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7
A.9cb	8.6 mm Radio Maps of the Sun (NELC - La Posta)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.9d	2 cm Radio Maps of the Sun (NELC - La Posta)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.10a	169 MHz - Interferometric Observations (Nancay)	373A 15	374A 12	375A 12	376A 14	377A 12	378A 13	379A 12	380A 15	381A 13	382A 12	383A 13	384A 12
A.10c	21 cm East-West Solar Scans (Fleurs)	373A 17	374A 14	375A 14	376A 16	378B 57	378A 15	379A 14	380A 17	381A 15	382A 14	383A 15	384A 14
A.10d	43 cm East-West Solar Scans (Fleurs)	373A 18	374A 15	375A 15	376A 17	378B 58	378A 16	379A 15	380A 18	381A 16	382A 15	383A 16	384A 15
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	373A 16	374A 13	375A 13	376A 15	377A 13	378A 14	379A 13	380A 16	381A 14	382A 13	383A 14	384A 13
A.11g	Solar X-ray (SMS/GOES)	373A 25	374A 20	375A 18	376A 21	377A 19	378A 20	379A 19	380A 26	381A 21	382A 18	383A 19	384A 17
A.11h	Solar X-ray (OSO-8; 1975-057A)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	
A.11ib	Solar EUV Spectroheliograms FeXV 284Å (AURA D2-B)	---	---	---	---	---	---	380A 36	381A 30	382A 26	383A 26		
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	---	374A 18	---	---	377A 18	---	---	---	---	---	---	---
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---
A.12e	Energetic Solar Particles (IMP H & J)	380B 23	381B 39	382B 29	382B 35	382B 12	383B 17	384B 10					
A.13a	Solar Wind (Pioneers 6 & 7)	---	374A 18	---	---	377A 18	378A 19	379A 18	---	---	---	---	---
A.13d	Solar Wind from IPS Measurements	373A 24	374A 17	375A 17	376A 20	377A 17	378A 18	380A123	380A 25	381A 20	382A 17	383A 18	
A.13e	Solar Plasma (IMP H & J)	380B 22	381B 38	382B 28	382B 34	383B 39	383B 16	384B 9					
A.17	Interplanetary Magnetic Field (Pioneer 8)	---	374A 19	---	---	---	---	---	---	---	---	---	---
A.17	Interplanetary Magnetic Field (Pioneer 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---
A.17c	Inferred IP Magnetic Field	373A 29	374A 23	375A 20	376A 24	377A 21	378A 24	379A 22	380A 31	381A 25	382A 22	383A 22	384A 20
A.18	Interplanetary Electric Field (Pioneer 8)	---	374A 19	---	---	---	---	---	---	---	---	---	---
A.18	Interplanetary Electric Field (Pioneer 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---
B.	Ionospheric (and Radio Wave Propagation) Phenomena												
B.51ca	High Latitude Quality Figures and Forecasts	374A115	375A103	376A113	377A111	378A114	379A115	380A119	381A126	382A113	383A118	384A108	
B.52	Graphs of Transmission Frequency Range	374A116	375A104	376A114	377A112	378A115	379A116	380A120	381A127	382A114	383A120	384A110	
B.53	Quality Figures Based on Frequency Ranges	374A118	375A106	376A116	377A114	378A117	379A118	380A122	381A129	382A116	383A119	384A109	
C.	Flare-Associated Events												
C.1a	Optical Observations Flares	373A 10	374A 20	375A 10	376A 10	377A 10	378A 10	379A 10	380A 10	381A 10	382A 10	383A 10	384A 10
C.1ba	Optical Observations Flares (Standardized Data)	378B 4	379B 4	380B 4	381B 4	382B 4	383B 4	384B 4					
C.1d	Flare Patrol Observations	373A 14	374A 11	375A 11	376A 13	377A 11	378A 12	379A 11	380A 14	381A 12	382A 11	383A 12	384A 11
C.1d	Flare Patrol Observations	378B 25	379B 8	380B 7	381B 13	382B 8	383B 10	384B 7					
C.1e	Flare Indices (by day)	378B 24	379B 7	380B 6	381B 12	382B 7	383B 9	384B 6					
C.1f	Flare Indices (by Region)	379B 22	380B 20	381B 36	382B 26	383B 32	384B 24						
C.3	Solar Radio Waves - Outstanding Occurrences	378B 26	379B 9	380B 8	381B 14	382B 9	383B 11	384B 8					
	Solar Radio Waves - Fixed Frequencies - Selected	373A 19	374A 16	375A 16	376A 18	377A 16	378A 17	379A 16	380A 19	381A 17	382A 16	383A 17	384A 16
C.3t	43.25, 80 and 160 MHz Selected Bursts (Culgoora)	374A107	376B 26	376A105	377A102	378A101	379A102	380A106	381A114	383B 37	383A103		
C.4a	Solar Radio Spectral Obs. (Fort Davis)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	
C.4b	Solar Radio Spectral Obs. (Boulder)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	
C.4d	Solar Radio Spectral Obs. (Culgoora)	378B 54	376B 24	376A 98	377A 94	378A 96	379A 95	380A102	381A100	383B 34	383A 96		
C.4e	Solar Radio SpectrUal Obs. (Weissenau)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	381B 45	381A100	382A 93	383A 96	384A 92	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)	---	---	376A 98	---	---	379A 95	---	381A100	382A 93	383A 96	384A 92	
C.4i	Solar Radio Spectral Obs. (Dürnten)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	
C.4j	Solar Radio Spectral Obs. (Manila)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	381B 45	381A100	382A 93	383A 96	384A 92	
C.5e	Solar X-ray (SMS/GOES)	373A 27	374A 22	375A 18	376A 23	377A 23	378A 22	---	380A 28	381A 23	382A 20	---	---
C.6	Sudden Ionospheric Disturbances	374A 96	375A 91	376A 97	377A 93	378A 95	379A 94	380A101	381A 98	382A 92	383A 95	394A 91	
D.	Geomagnetic and Magnetospheric Phenomena												
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp	374A110	374A 98	376A108	377A105	378A105	379A108	380A112	381A119	382A106	383A111	384A101	
D.1ba	27-day Chart of Kp Indices	374A111	374A 99	376A109	377A106	378A107	379A109	380A114	381A121	382A108	383A113	384A103	
D.1c	27-Day Chart of C9	378A108	378A108	378A108	378A108	378A108							
D.1d	Principal Magnetic Storms	374A113	374A101	376A111	377A108	378A112	379A113	380A117	381A124	382A111	383A116	384A106	
D.1e	Reduced Magnetograms	---	---	381B 47	382B 40	---	---	---					
D.1f	Sudden Commencement and Solar Flare Effects	374A114	374A102	376A112	377A110	378A113	379A114	380A118	381A125	382A112	383A117	384A107	
D.1g	Equatorial Indices Dst	374A112	374A100	376A110	377A107	378A111	379A112	380A116	381A123	382A110	383A115	384A105	
F.	Cosmic Rays												
F.1a	Cosmic Ray Neutron Counts (Deep River)	374A106	375A 96	377B 34	377A103	378A104	379A103	380A107	381A118	382A101	383A104	384A 96	
F.1b	Cosmic Ray Neutron Counts (Climax)	374A108	375A 96	376A106	377A103	378A104	379A103	380A107	381A118	382A101	383A104	384A 96	
F.1e	Cosmic Ray Neutron Counts (Alert)	374A108	375A 96	377B 34	377A103	378A104	379A103	380A107	381A118	382A101	383A104	384A 96	
F.1f	Cosmic Ray Neutron Counts (Calgary)	374A108	375A 96	376A106	377A103	378A104	380B 28	381B 44	381A118	382A101	383A104	384A 96	
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)	374A108	375A 96	376A106	377A103	378A104	380B 28	381B 44	381A118	382A101	383A104	384A 96	
F.1h	Cosmic Ray Neutron Counts (Thule)	374A108	375A 96	376A106	377A103	378A104	379A103	380A107	381A118	383B 38	383A104		
F.1i	Cosmic Ray Neutron Counts (Kiel)	374A108	375A 96	376A106	377A103	378A104	379A103	380A107	381A118	382A101	383A104	384A 96	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	374A108	375A 96	376A106	377A103	378A104	379A103	380A107	381A118	382A101	383A104	384A 96	
H.	Miscellaneous												
H.60	IUWDS Alert Decisions	373A 4	374A 4	375A 5	376A 5	377A 5	378A 5	379A 5	380A 4	381A 4	382A 4	383A 5	384A 5
H.62	Abbreviated Calendar Record	379B 15	380B 13	381B 29	382B 19	383B 25	384B 17						

Note: A = Part I, B = Part II.

374A 28 listed under 1975 Aug shows that data for August 1975 were contained in *Solar-Geophysical Data* Number 374 - Part I beginning on page 28.

SGD 384 Part II (Comprehensive)

FEBRUARY 1976 DATA

Contents

	Page
Solar Flares	
Hα Solar Flares (Standardized Data)	4-6
Daily Flare Indices	6
No-Flare-Patrol Chart	7
Solar Radio Waves	
Worldwide Outstanding Occurrences at Fixed Frequencies	8
Energetic Solar Particles and Plasma	9-14
Magnetograms of Geomagnetic Storm (No reduced magnetograms have been produced for February 1976)	

Hα SOLAR FLARES

FEBRUARY 1976

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONQ	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	01	0348	0418	NO FLARE PATROL													
149 ABST	01	0820E	0821	0825D	S02	W65	.906	14047	27.5	5D	-F		P	0821	87	1.9	D
	01	1509	1644	NO FLARE PATROL													
	01	1657	1704	NO FLARE PATROL													
	01	1712	1716	NO FLARE PATROL													
	01	1719	1731	NO FLARE PATROL													
	01	1747	1803	NO FLARE PATROL													
	01	1809	1829	NO FLARE PATROL													
	01	1917	2114	NO FLARE PATROL													
	01	2221	2248	NO FLARE PATROL													
	01	2310	2350	NO FLARE PATROL													
	02	0020	0048	NO FLARE PATROL													
150 MCMA	02	1334	1340	1348	S04	W88	.399	14047	27.0	14	-F		C	1340			D
	02	2015	2035	NO FLARE PATROL													
	02	2134	2151	NO FLARE PATROL													
	02	2229	2315	NO FLARE PATROL													
	03	1628	1631	NO FLARE PATROL													
	03	1635	1645	NO FLARE PATROL													
	03	2020	2027	NO FLARE PATROL													
	03	2123	2128	NO FLARE PATROL													
	03	2129	2144	NO FLARE PATROL													
	03	2201	2210	NO FLARE PATROL													
	03	2238	2248	NO FLARE PATROL													
	04	0515	0529	NO FLARE PATROL													
	04	0925	0930	NO FLARE PATROL													
	04	1718	1730	NO FLARE PATROL													
	04	1753	1818	NO FLARE PATROL													
	04	1908	2028	NO FLARE PATROL													
	04	2032	2057	NO FLARE PATROL													
	04	2101	2315	NO FLARE PATROL													
	05	0830	0910	NO FLARE PATROL													
	05	0915	0925	NO FLARE PATROL													
	05	2205	2210	NO FLARE PATROL													
	06	0451	0504	NO FLARE PATROL													
	06	0511	0530	NO FLARE PATROL													
	06	0602	0605	NO FLARE PATROL													
	07	0332	0339	NO FLARE PATROL													
	07	0623	0638	NO FLARE PATROL													
	07	1856	1902	NO FLARE PATROL													
	07	1914	1920	NO FLARE PATROL													
	07	1924	1928	NO FLARE PATROL													
	08	0337	0349	NO FLARE PATROL													
	08	0355	0422	NO FLARE PATROL													
	08	0424	0454	NO FLARE PATROL													
	08	0456	0500	NO FLARE PATROL													
	08	2213	2225	NO FLARE PATROL													
	09	0907	1002	NO FLARE PATROL													
	09	1300	1305	NO FLARE PATROL													
	09	1749	1954	NO FLARE PATROL													
	09	2213	2354	NO FLARE PATROL													
	10	0004	0010	NO FLARE PATROL													
	10	0058	0135	NO FLARE PATROL													
	10	0210	0225	NO FLARE PATROL													
	10	0445	0500	NO FLARE PATROL													
	10	0609	0617	NO FLARE PATROL													
151 HTPR	10	1111	1114	1120	N25	W30	.682	14078	8.2	9	-N		C	1114	60	.8	E
	10	1312	1327	NO FLARE PATROL													
	10	1336	1346	NO FLARE PATROL													
	10	1509	1519	NO FLARE PATROL													
	10	1528	1535	NO FLARE PATROL													
	10	1545	1633	NO FLARE PATROL													
	11	1442	1510	NO FLARE PATROL													
	11	1544	1545	NO FLARE PATROL													
	11	2100	2300	NO FLARE PATROL													
	12	1301	1323	NO FLARE PATROL													
	12	1326	1405	NO FLARE PATROL													
	12	1530	1600	NO FLARE PATROL													
	12	1727	1757	NO FLARE PATROL													
152 BOUL	12	2141	2145	2158	S12	E13	.240	14079	13.9	17	-F	2	C	2145	32	.3	

Hα SOLAR FLARES

FEBRUARY 1976

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	12	2320	0000	NO FLARE PATROL													
153 ABST	13	0832E	0834	0842D	S12	E06	.138	14079	13.8	10D	-F		P	0834	87	.9	EJ
154 CATA	13	1000	1000	1005	S12	E06	.138	14079	13.9	5	-N	1		1000	56	.4	
	13	1232	1250	NO FLARE PATROL													
	14	0200	0215	NO FLARE PATROL													
155 ABST	14	0846E	0847	0850D	S15	W04	.158	14079	14.1	4D	-F		P	0847	44	.4	D
	14	2024	2033	NO FLARE PATROL													
	14	2350	0035	NO FLARE PATROL													
	15	0045	0115	NO FLARE PATROL													
	15	0200	0210	NO FLARE PATROL													
156 ABST	15	0617	0621	0625	S15	W16	.304	14079	14.1	8	-F		C	0621	87	.9	DJK
	15	2203	2255	NO FLARE PATROL													
157 ABST	16	0710	0712	0720D	S10	W33	.541	14079	13.8	10D	-F		P	0712	47	1.0	DK
158 KHAR	16	1140E	1211	1222D	S03	E90	1.000	14098	23.2	42D	?F		C				
	IMP-1 NO		CATA2	RAMY2	HUAN2	HTPR2											
	16	1826	1847	NO FLARE PATROL													
	16	1913	1915	NO FLARE PATROL													
	16	1919	1925	NO FLARE PATROL													
	16	1933	1936	NO FLARE PATROL													
	16	2030	2031	NO FLARE PATROL													
	16	2058	2128	NO FLARE PATROL													
	16	2229	2245	NO FLARE PATROL													
159 ABST	17	0801E	0803	0808D	S11	W47	.726	14079	13.8	7D	-F		P	0803	79	1.2	DK
	17	1557	1610	NO FLARE PATROL													
	17	1623	1711	NO FLARE PATROL													
	17	1726	1746	NO FLARE PATROL													
	17	1833	1908	NO FLARE PATROL													
	17	2327	2329	NO FLARE PATROL													
	17	2357	0015	NO FLARE PATROL													
	18	1608	1641	NO FLARE PATROL													
	18	1927	1929	NO FLARE PATROL													
	19	1905	2246	NO FLARE PATROL													
160 ABST	20	0638E	0640	0646D	S04	E37	.601	14098	23.1	8D	-F		P	0640	70	.8	D
161 MONT	20	0940	0943	0959	S02	E34	.563	14098	23.0	19	-F		C	0943	40		
162 MONT	20	1025	1035	1046	S02	E34	.563	14098	23.0	21	-F		C	1035	60		E
	20	2120	2137	NO FLARE PATROL													
163 MONT	21	0859	0903	0914	S03	E21	.363	14098	22.9	15	-F		C	0903	40		E
	21	1753	1758	NO FLARE PATROL													
	21	1810	1813	NO FLARE PATROL													
	21	2242	2250	NO FLARE PATROL													
	22	1329	1340	NO FLARE PATROL													
	22	1351	1512	NO FLARE PATROL													
	22	1520	1525	NO FLARE PATROL													
	23	2147	2159	NO FLARE PATROL													
	24	1354	1412	NO FLARE PATROL													
	24	1822	1838	NO FLARE PATROL													
	25	1518	1559	NO FLARE PATROL													
164 HTPR	25	1600	1601	1612	S10	E15	.261	14104	26.8	12	-F		C	1601	30	.3	
	25	1630	1641	NO FLARE PATROL													
	25	1644	1655	NO FLARE PATROL													
	25	1822	1831	NO FLARE PATROL													
	25	2013	2155	NO FLARE PATROL													
	25	2204	2216	NO FLARE PATROL													
GRP63165	26	1044+2	1052	1111	N05	E94	.996	14109	1.7	27	-F						DG
			1102														
HTPR	26	1044	1102	1112	N05	E86	.998	14109	3.9	28	-N		C	1102	30		
MONT	26	1046	1052	1109	N05	E83	.994	14109	3.7	23	-F		C	1052	20		DG

Hα SOLAR FLARES

FEBRUARY 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE FEB	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
166 HTPR	26	1156	1203	1212	N05	E85	.997	14109	3.9	16	-F		C	1203	30		
	26	1849	1911	NO FLARE PATROL													
	26	1912	1923	NO FLARE PATROL													
	26	1924	1947	NO FLARE PATROL													
	26	1950	1955	NO FLARE PATROL													
	26	2010	2029	NO FLARE PATROL													
	27	1721	1730	NO FLARE PATROL													
	27	1732	1739	NO FLARE PATROL													
	27	2144	2156	NO FLARE PATROL													
	28	2030	2115	NO FLARE PATROL													
	28	2129	2139	NO FLARE PATROL													
	28	2207	2210	NO FLARE PATROL													
	29	1628	1641	NO FLARE PATROL													
	29	1649	1700	NO FLARE PATROL													
	29	2215	2230	NO FLARE PATROL													

"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by a high speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H and K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line suggests ejection of high velocity material.
S = Brightness follows disappearance of filament (same position).
T = Region active all day.
U = Two bright branches, parallel (||) or converging (Y).
V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

DAILY FLARE INDICES
Includes all Flares

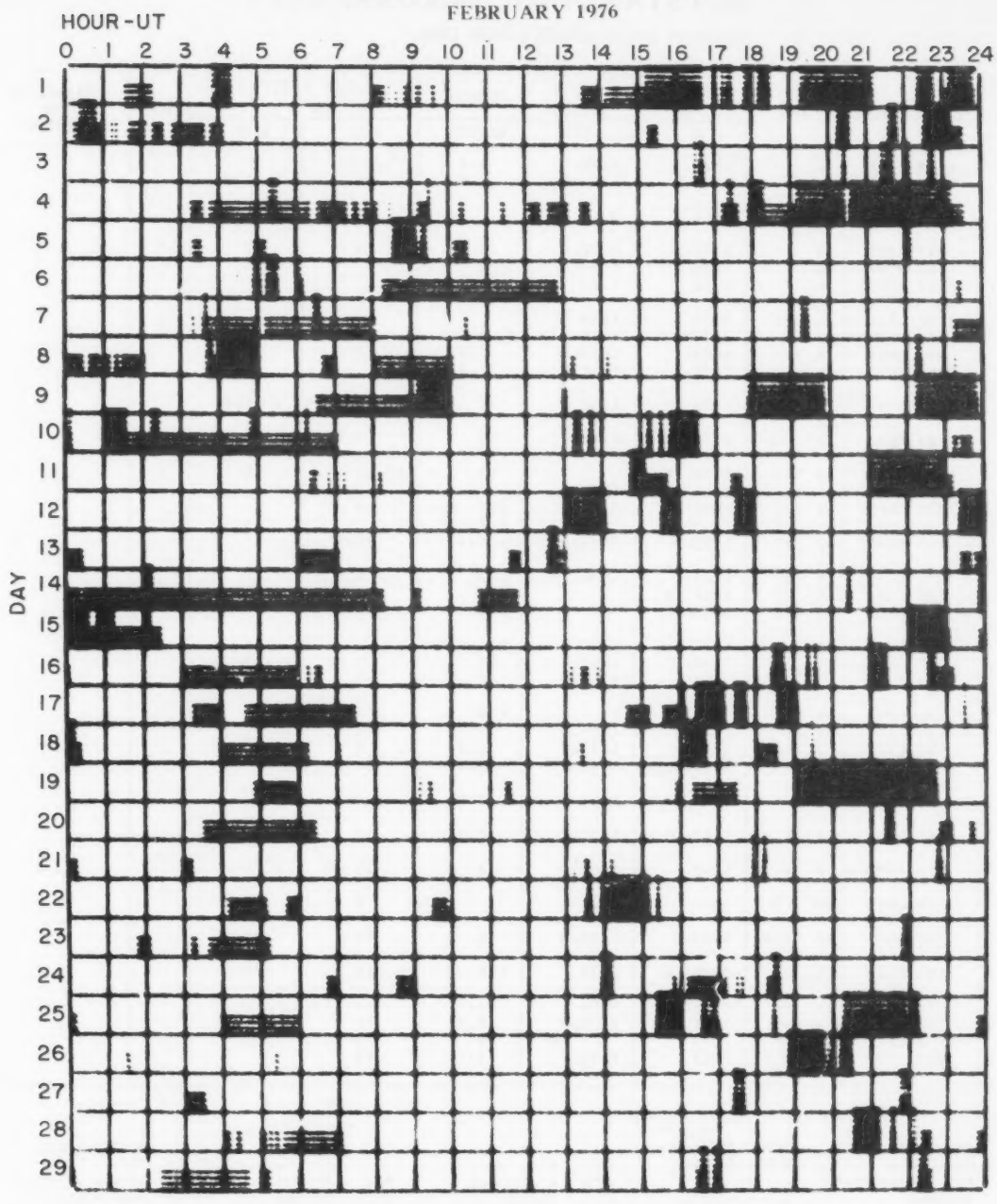
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
760201	1.08	17.9	760211	0.00	21.5	760221	5.28	23.7
760202	.88	22.2	760212	5.57	21.3	760222	0.00	22.4
760203	0.00	23.0	760213	10.61	23.7	760223	0.00	23.8
760204	0.00	19.1	760214	5.50	22.9	760224	0.00	23.4
760205	0.00	23.1	760215	5.54	22.5	760225	5.75	20.9
760206	0.00	23.4	760216	3.47	22.7	760226	1.69	22.7
760207	0.00	23.4	760217	2.04	21.7	760227	0.00	23.5
760208	0.00	22.6	760218	0.00	23.4	760228	0.00	23.0
760209	0.00	19.2	760219	0.00	20.3	760229	0.00	23.4
760210	2.02	21.2	760220	10.20	23.7			

When no Flare Index is given, it is 0 for that day.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

FEBRUARY 1976



Observatories included in total patrol:

Abastumani	Catania	Hurbanovo	Manila	Palehua	Upice
Arcetri	Culgoora	Kharkov	McMath-Hulbert	Ramey	Voroshilov
Athenes	Haute Provence	Kodaikanal	Mitaka	Tachkent	Wendelstein
Boulder	Herstmonceux	Locarno	Monte Mario	Tehran	Zürich
Bucharest	Huancayo	Lvov			

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

FEBRUARY 1976

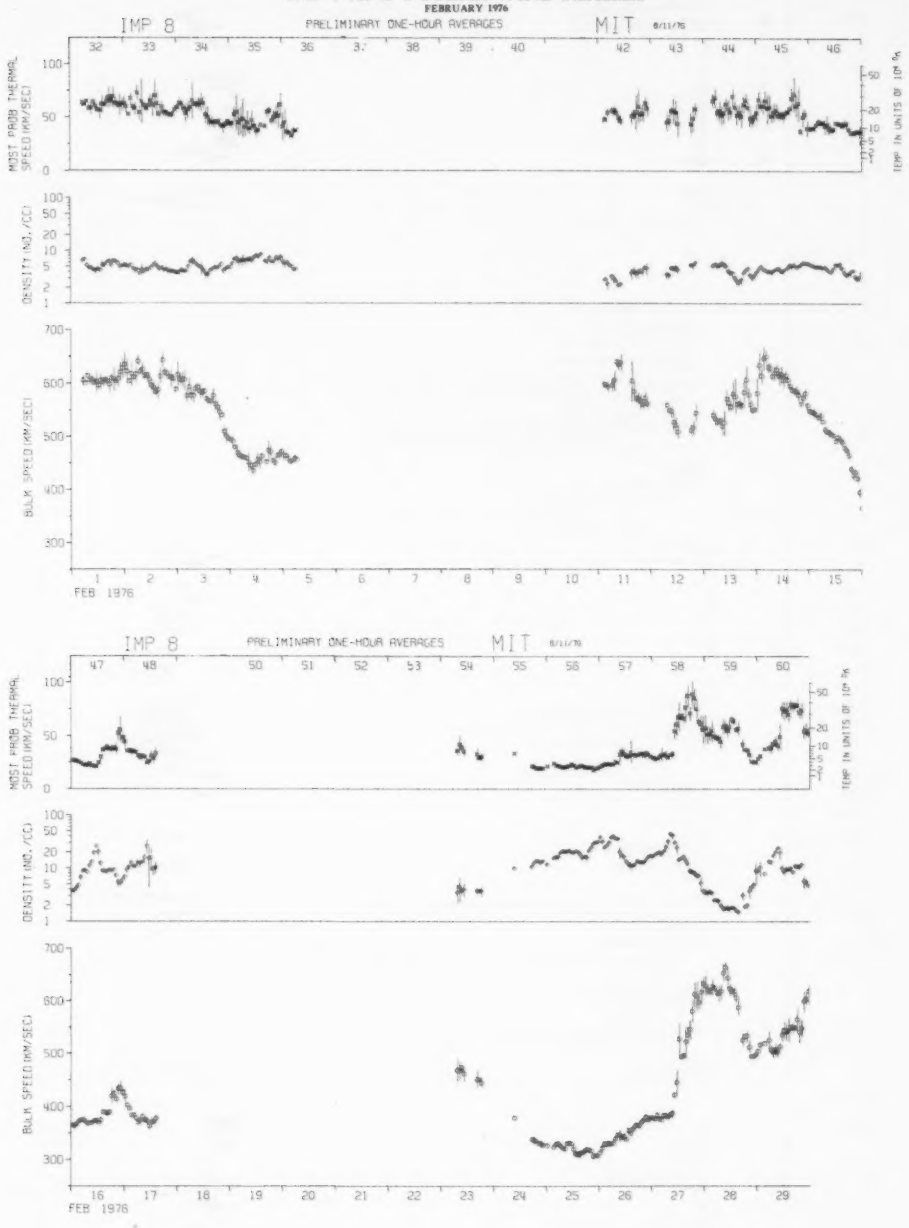
FEB 1976	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
2	1420	ARCE	8	1137.7	1137.9	0.5				
	260	ONDR	8 S	1346.6	1346.6	1.5	14	3.2		
5	3100	CRIM	24 R	0850	0910		3			
6	930	BORD	45 C	0922.4	0922.4	0.1	14	2		
	18	MCMA	6	1434	1436	3			1	
	18	MCMA	6	1532	1533	3			1	
10	3100	CRIM	24 R	0833	1149		3			
	260	ONDR	3 S	1002	1002	0.3	16			
	260	ONDR	8 S	1413.7	1413.7	0.2	7			
	9240	ARCE	1	1430.7	1430.9	0.7				
11	2800	OTTA	20 GRF	1323	1332	35 D	1.8	0.9		
12	2700	PENT	20 GRF	2135	2148	50	1.8	0.9		
13	200	GORK	43 NS	0558 E		50		20		
	3100	CRIM	24 R	0648	1122		7			
	260	ONDR	43 NS	0920		301 D	15			
	200	GORK	44 NS	0943		137 D		5		
	245	SGMR	43 NS	1353.5	2006.8	493.50	25.9			
14	221	ABST	44 NS	0500	0606.5	180	8			
	200	GORK	44 NS	0540 E		170		5		
	260	ONDR	44 NS	0750 E		230	22			
15	9240	ARCE	20	1007	1132.5	132				
	260	ONDR	45 C	1049.5	1049.5	15	24	9		
	260	ONDR	4 S/F	1108	1108.2	2	35	12		
16	260	ONDR	44 NS	0800 E		400 D	10			
	550	KIEV	1 S	1228.1	1228.5	0.5	2			
	550	KIEV	2 S/F	1231	1231.6	2.2	9			
	1420	ARCE	8	1519.3	1519.4	0.4				
17	260	ONDR	8 S	1017.3	1017.3	0.2	12			
19	260	ONDR	8 S	1132.2	1132.2	0.2	11			
21	127	TORN	5 S	1255	1256	5	15 U	4		
22	3100	CRIM	26 FAL	1025	1038		2			
26	221	ABST	42 SER	0830.8	0838.8	13	58	26		
27	550	KIEV	44 NS	0706 E	1035	415 D	26	24		
29	550	KIEV	27 RF	0942.5	0951	19.5	6	27		
	260	ONDR	8 S	1035.8	1035.8	0.3	26			
	550	KIEV	27 RF	1035	U	31	23	25		
	550	KIEV	6 S	1352	1353	1.7	20			

Reports received from the following observatories:

ABST = Abastumani
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
ATHN = Athens
DWIN = Dwingeloo
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
KISV = Kislovodsk
MANI = Manila
MCMA = McMath-Hulbert
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
VORO = Voroshilov (Ussurisk)

IMP 7 AND 8 SOLAR WIND PLASMA

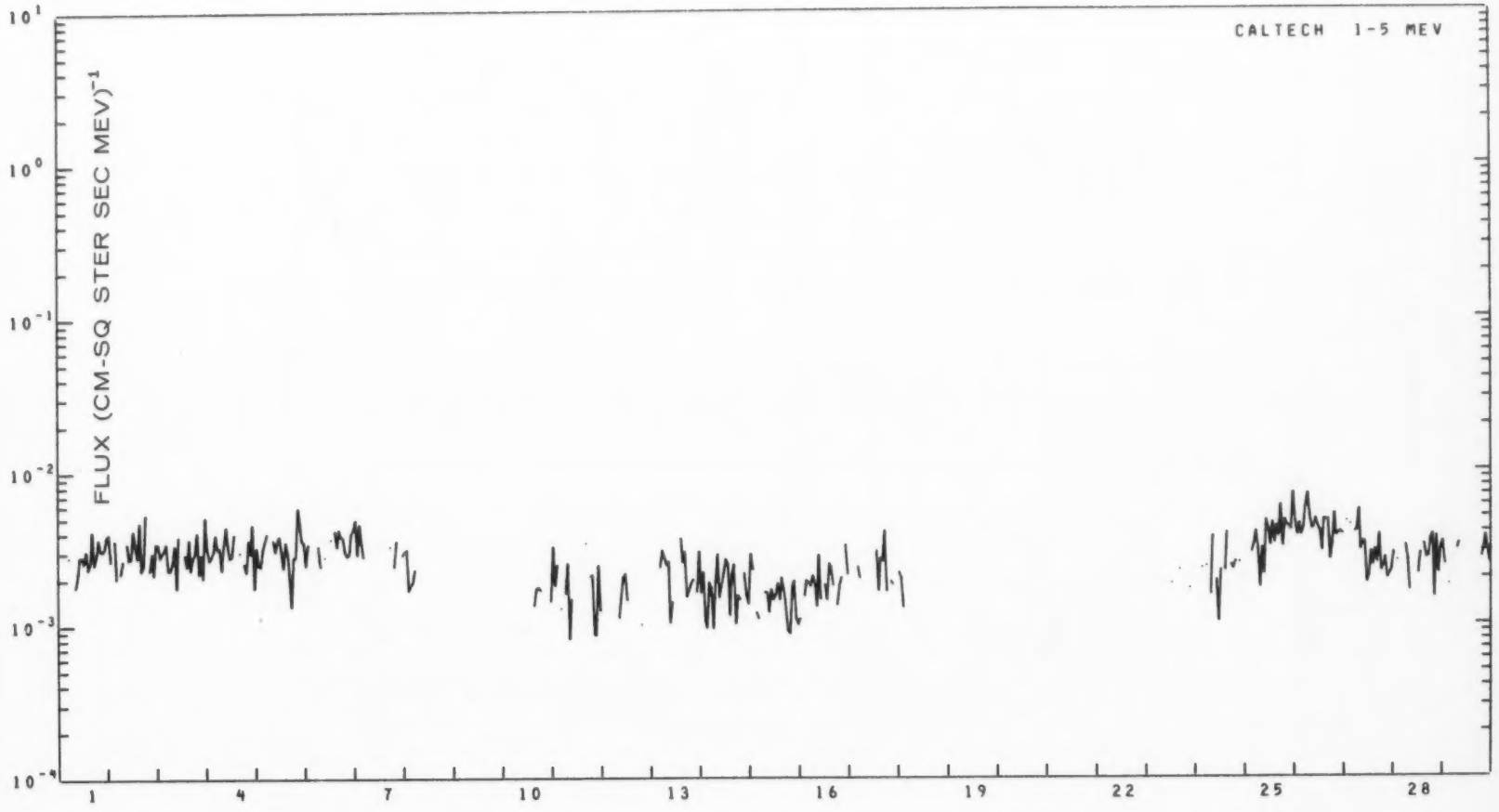
FEBRUARY 1976



IMP 7 AND 8 ELECTRONS

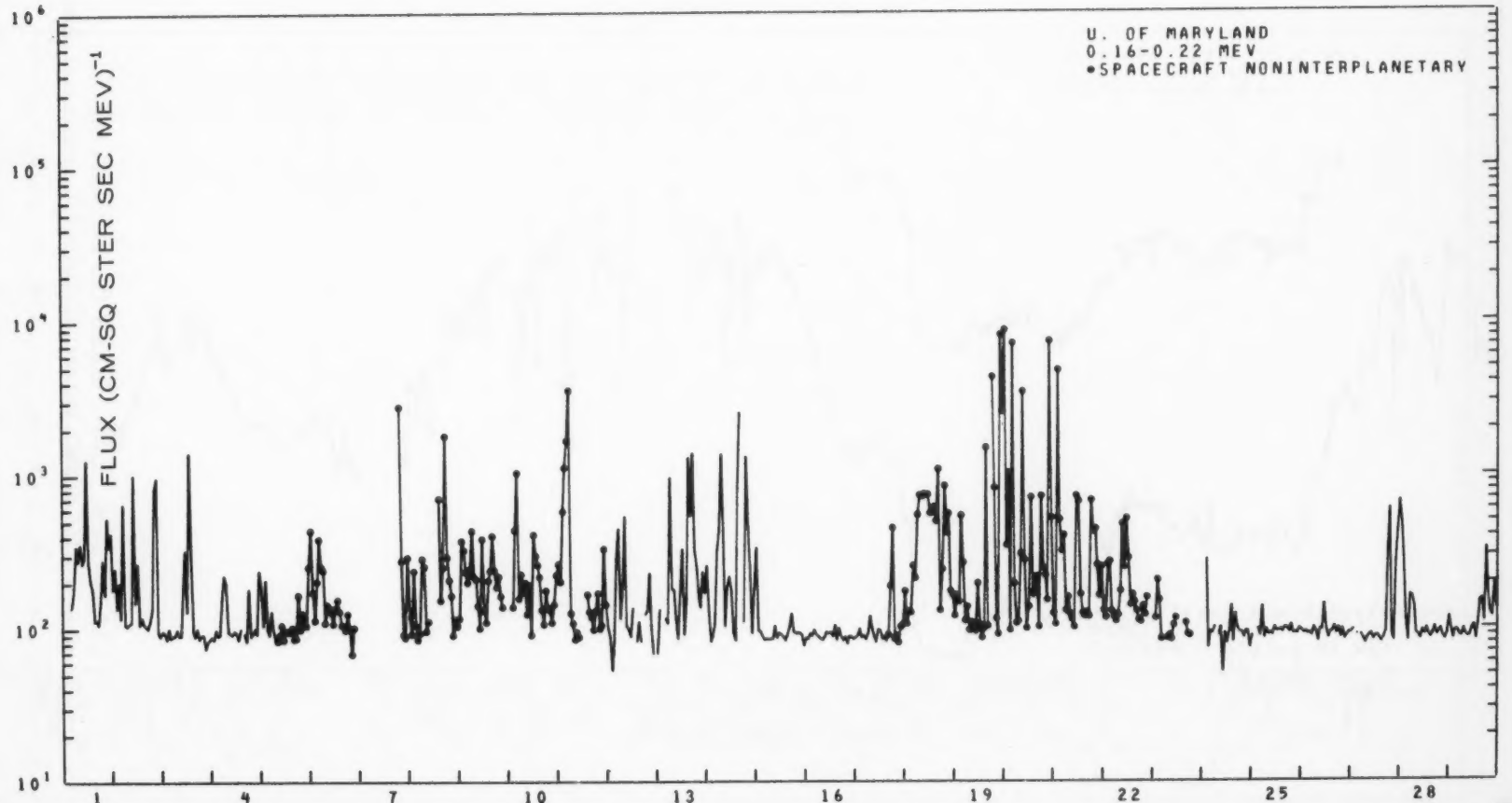
FEBRUARY 1976

10 Feb 76



IMP 7 AND 8 LOW ENERGY PROTONS

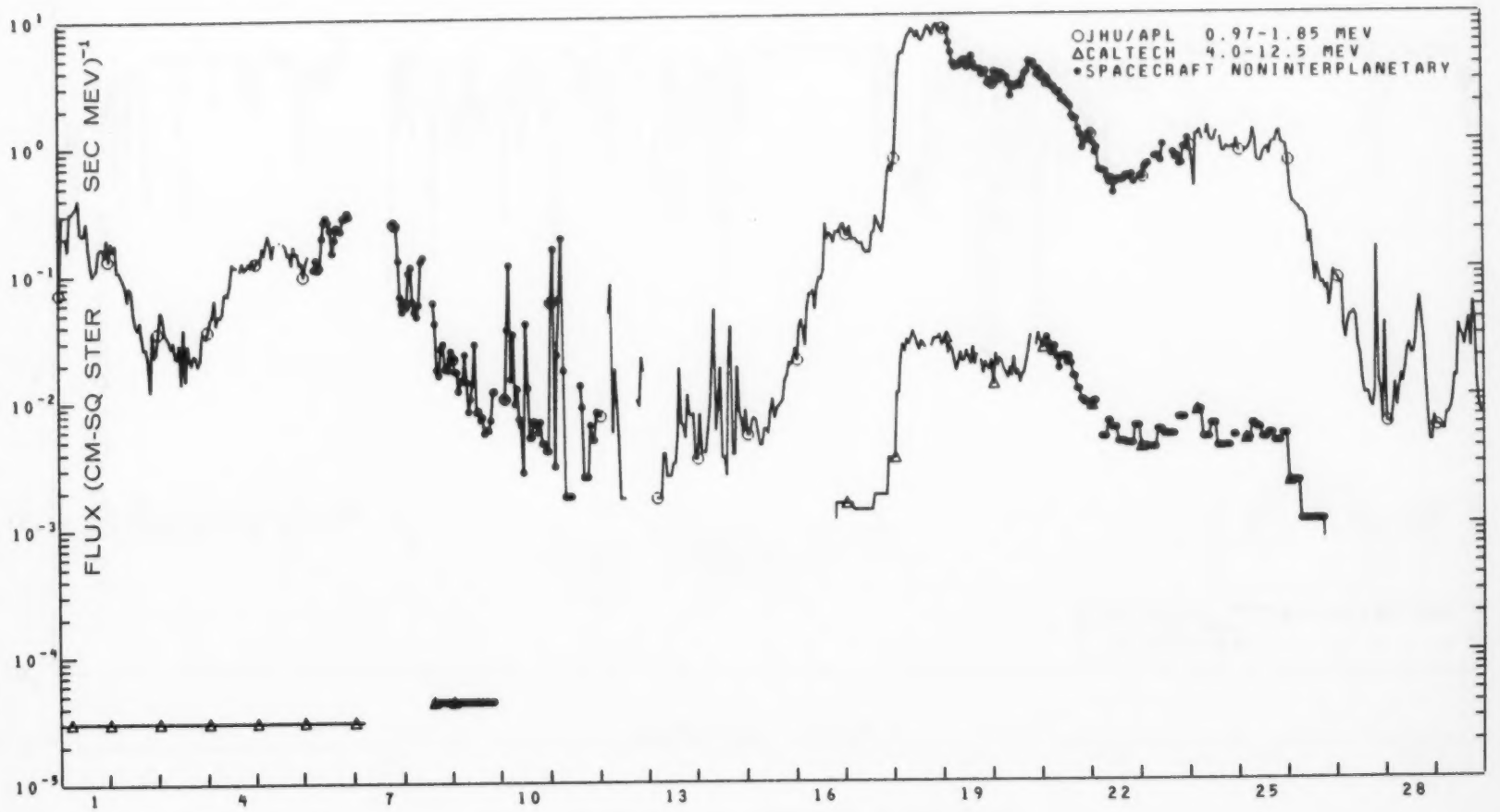
FEBRUARY 1976



11 Feb 76

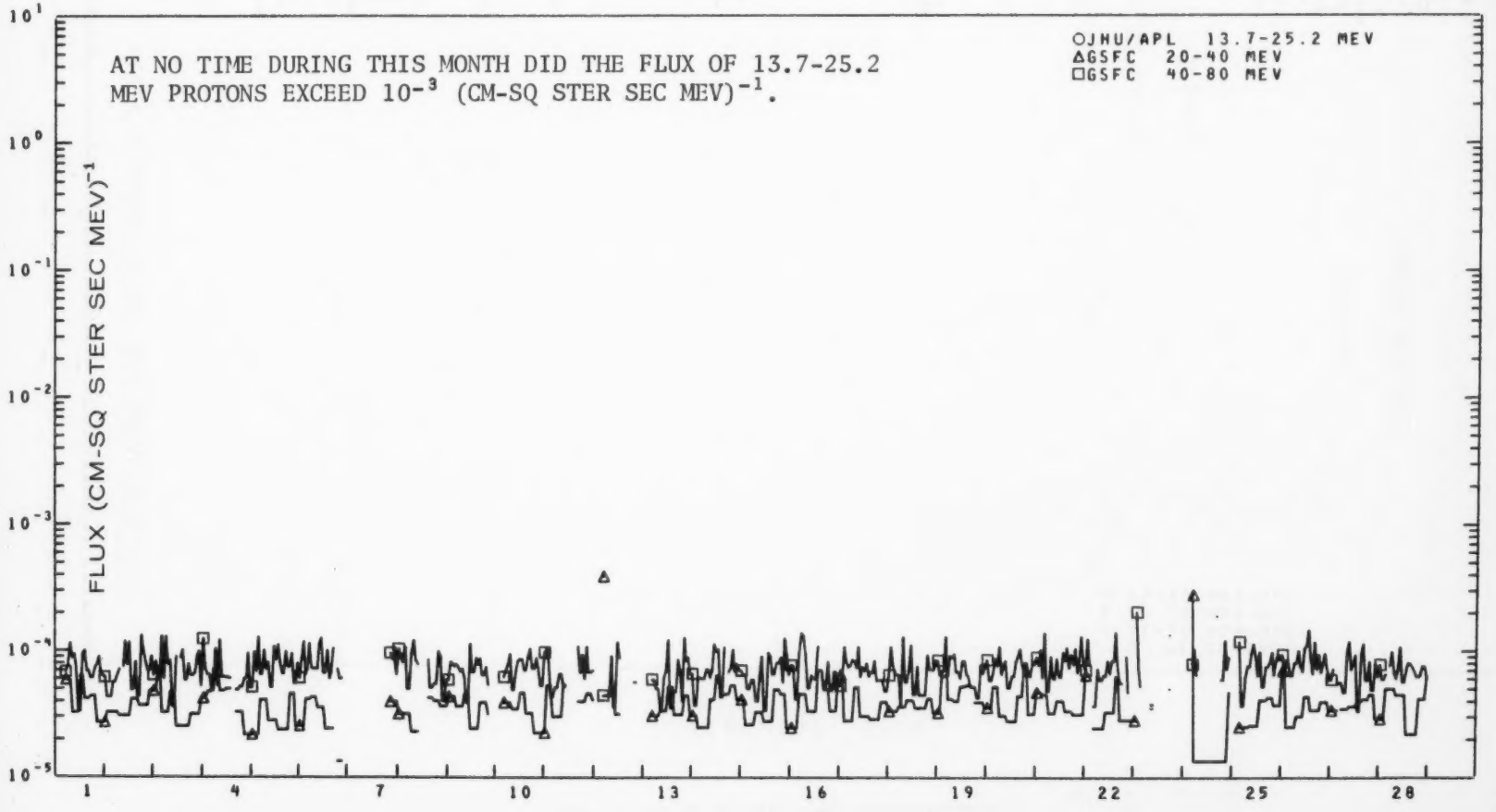
IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

FEBRUARY 1976



IMP 7 AND 8 HIGH ENERGY PROTONS

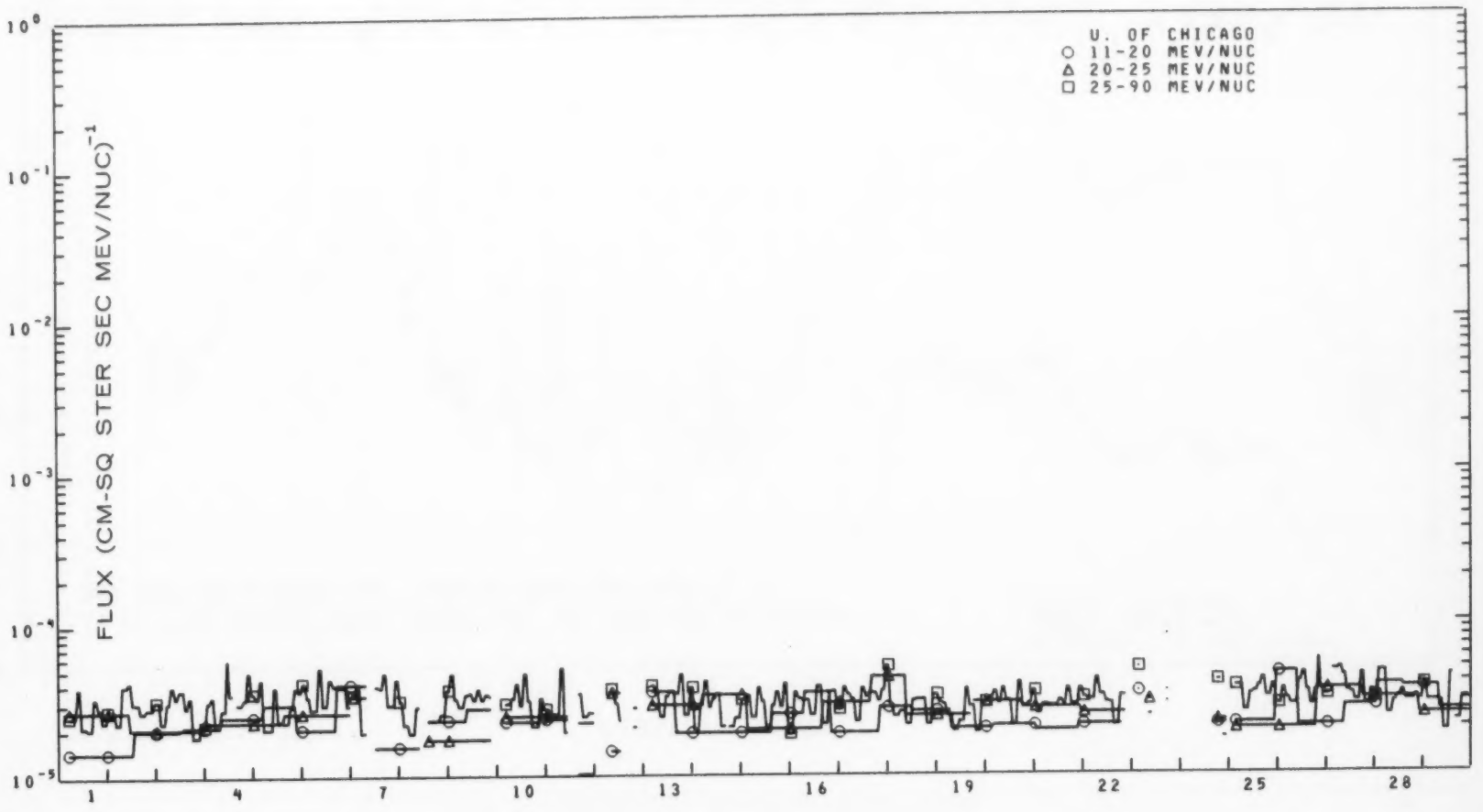
FEBRUARY 1976



13
Feb 76

IMP 7 AND 8 ALPHA PARTICLES

FEBRUARY 1976



JANUARY 1976 DATA

Contents

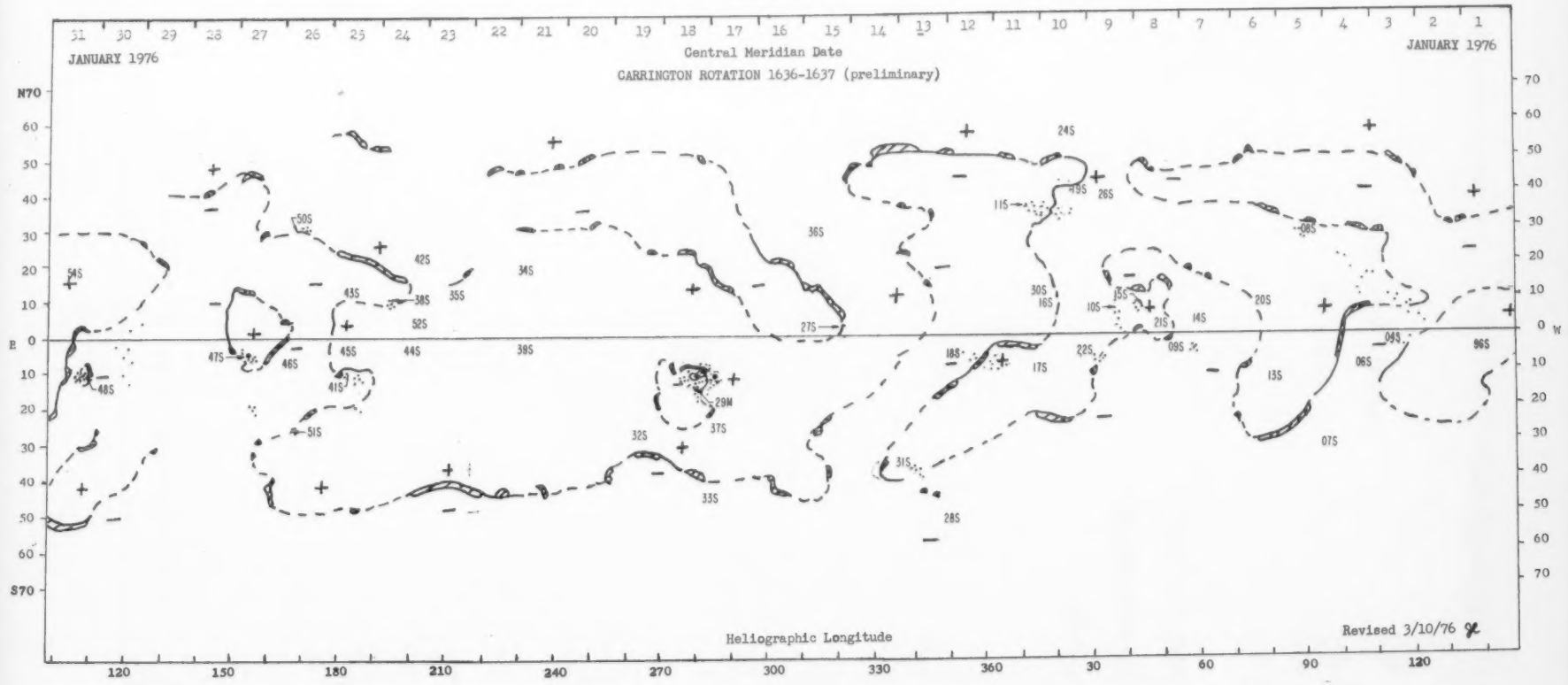
	Page
Hα Synoptic Chart (revised)	16
Abbreviated Calendar Record	17-24
Regional Flare Index	24

16
Jan 76

ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

JANUARY 1976



ABBREVIATED CALENDAR RECORD

Jan. 1, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 400	Kp	1+ 1- 1o 2- 2o 1- 1+ 1-
	sc	
Aurora	USSR	
	W.E.	Auroral reports have been discontinued from Western Europe.
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices		Rz: 0 10cm flux: 75 Flare: 3/20.7 Ca: no data Ip: 0 Ia: 2
Solar Regions		(13996) S04
Sunspots		

Jan. 2, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 400	Kp	0o 1+ 1o 1o 1o 1o 2o 1+
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices		Rz: 0 10cm flux: 74 Flare: 0/22.7 Ca: no data Ip: 0 Ia: 4
Solar Regions		
Sunspots		

Jan. 3, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	|
	m	
	Dkm	
SID		
X-Rays		
Ap 15	Kp	2o 2o 2+ 2+ 4- 3- 4o 4o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data 325-340° SW-
Indices		Rz: 0 10cm flux: 74 Flare: 0/23.9 Ca: 2.4 Ip: 0 Ia: 3
Solar Regions		14004 S02 (2)
Sunspots		19651 N00 (α)1

Jan. 4, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	|
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 10	Kp	3- 3o 3- 1+ 2+ 2+ 3- 2+
	sc	
Aurora	USSR	ϕ = 57° 1600-2100 (HA1)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 0 10cm flux: 74 Flare: 0/24.0 Ca: 1.5 Ip: 0 Ia: 3
Solar Regions		(14006) S09 (14007) S31
Sunspots		

Jan. 5, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 9 — Kp: 2+ | 3- | 2+ | 3- | 1+ | 2- | 2+ | 2o

sc

Aurora — USSR: ϕ = 57° 1600-2100 (HA1); ϕ = 60° 2300-2400 (R_3R2)

W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 0 10cm flux: 74 Flare: 1/22.6 Ca: 2.2 Ip: 0 Ia: 2

Solar Regions — (14008) N28

Sunspots

Jan. 6, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 13 — Kp: 2- | 3- | 2o | 1o | 2o | 3o | 4- | 4+

sc

Aurora — USSR

W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- no data 30° SE no data 95° W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 0 10cm flux: 74 Flare: 0/20.7 Ca: 1.4 Ip: 0 Ia: 2

Solar Regions — 14013 S12 (14020) N09

Sunspots

Jan. 7, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 11 — Kp: 4o | 3o | 2+ | 2o | 2o | 3- | 2- | 2-

sc

Aurora — USSR

W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data SW- no data

Indices — Rz: 0 10cm flux: 74 Flare: 0/21.3 Ca: 1.6 Ip: 0 Ia: 2

Solar Regions — (14014) N04

Sunspots

Jan. 8, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm, dm, m, Dkm

SID

X-Rays

Ap 50 — Kp: 0+ | 2- | 1o | 1+ | 1+ | 1+ | 2o | 2+

sc

Aurora — USSR

W.E.

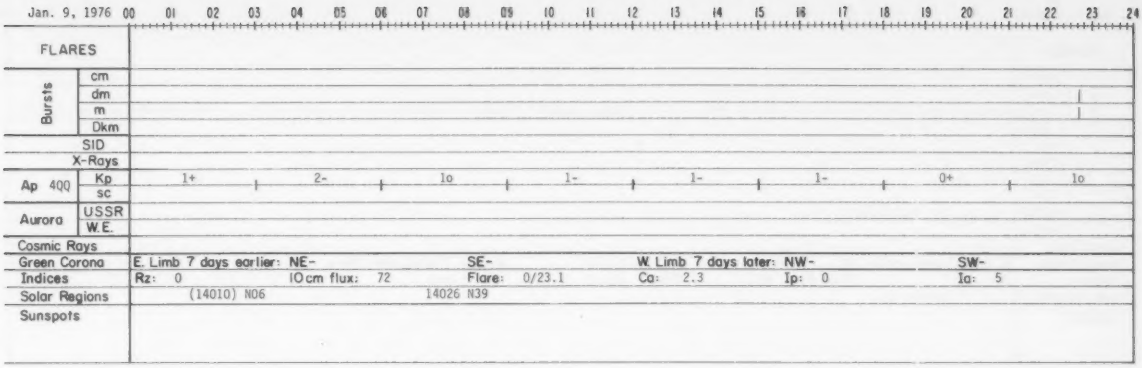
Cosmic Rays

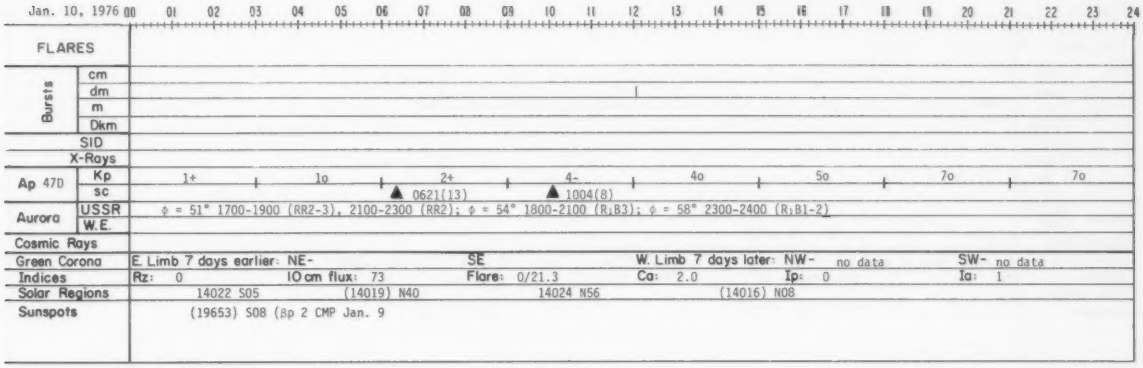
Green Corona — E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data

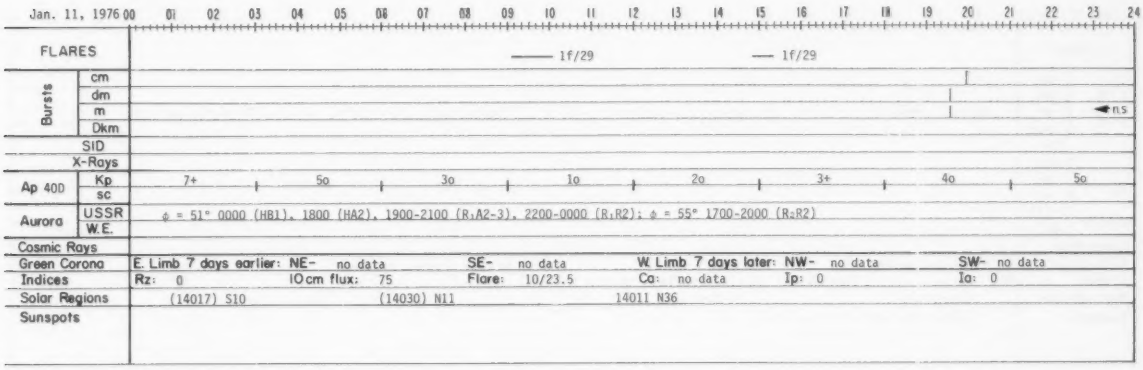
Indices — Rz: 0 10cm flux: 73 Flare: 0/23.9 Ca: 2.5 Ip: 0 Ia: 2

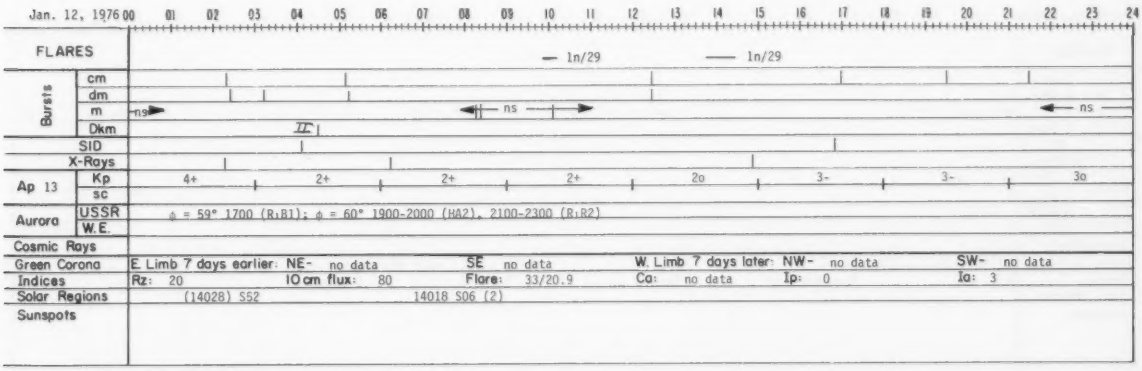
Solar Regions — (14009) S04 14021 N02 (14015) N07

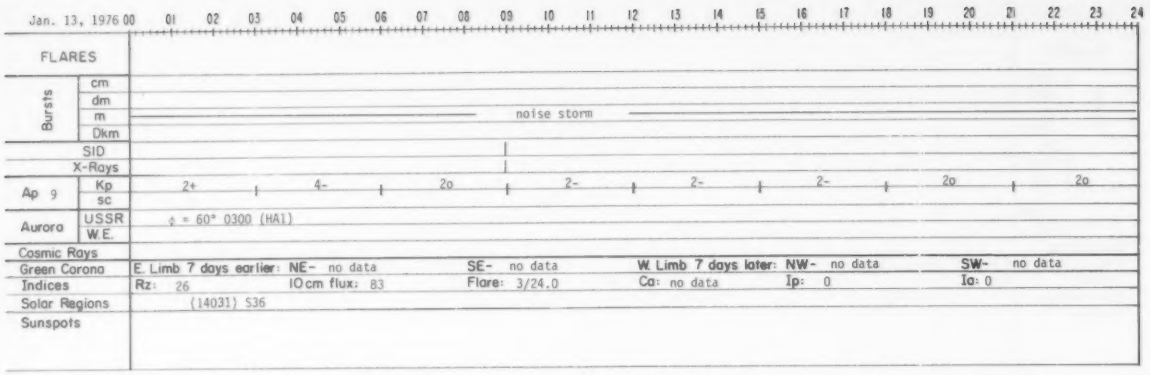
Sunspots

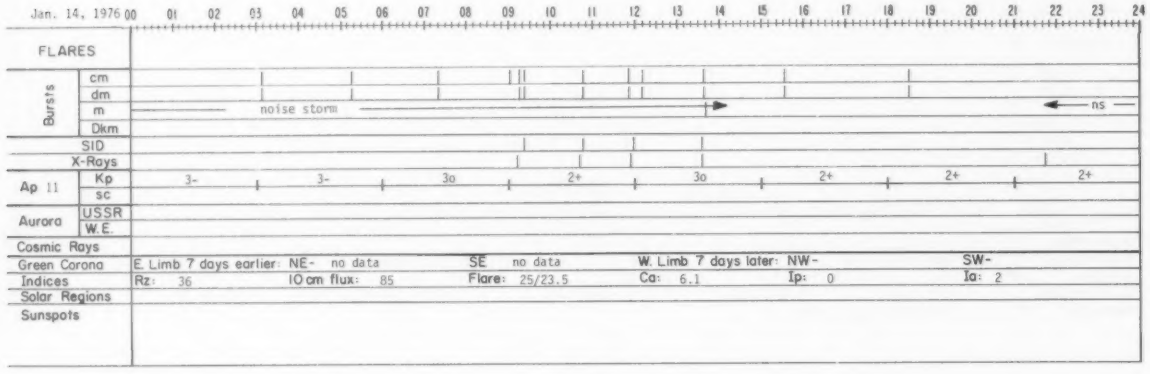

Jan. 9, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 400
Kp
1+ 2- 1o 1- 1- 1- 0+ 1o
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE-
W. Limb 7 days later: NW-
SW-
Indices
Rz: 0
10cm flux: 72
Flare: 0/23.1
Ca: 2.3
Ip: 0
Ia: 5
Solar Regions
(14010) N06
14026 N39
Sunspots

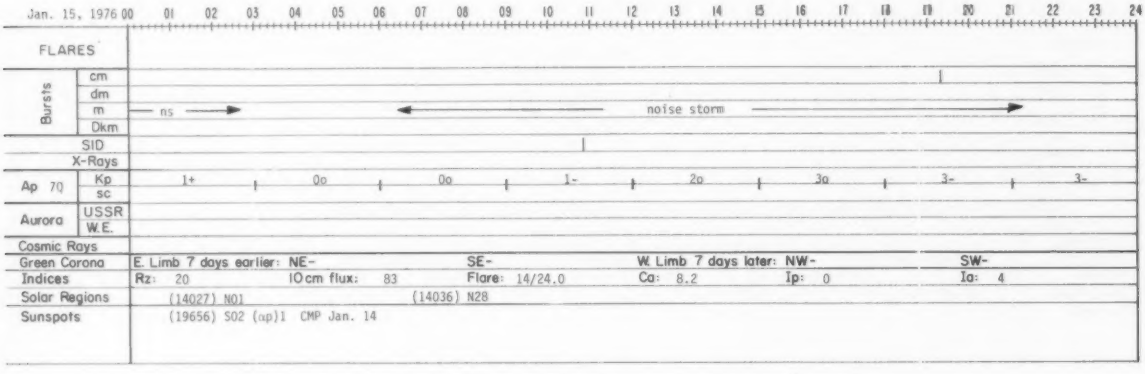

Jan. 10, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 470
Kp
1+ 1o 2+ 4- 4o 5o 7o 7o
sc
0621(13)
1004(8)
Aurora
USSR
φ = 51° 1700-1900 (RR2-3), 2100-2300 (RR2); φ = 54° 1800-2100 (R1B3); φ = 58° 2300-2400 (R1B1-2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 0
10cm flux: 73
Flare: 0/21.3
Ca: 2.0
Ip: 0
Ia: 1
Solar Regions
14022 S05
(14019) N40
14024 N56
(14016) N08
Sunspots
(19653) S08 (Bp 2 CMP Jan. 9

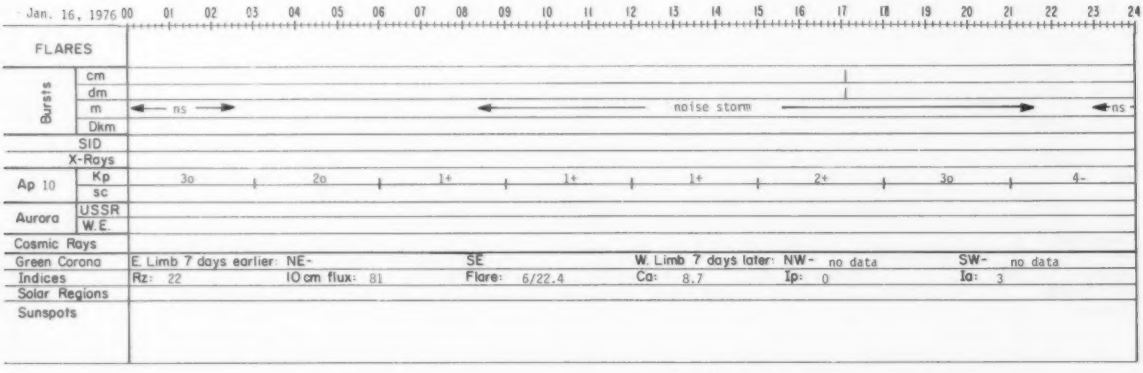

Jan. 11, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/29
1f/29
Bursts
cm
dm
m
ns
Dkm
SID
X-Rays
Ap 400
Kp
7+ 5o 3o 1o 2o 3+ 4o 5o
sc
Aurora
USSR
φ = 51° 0000 (HB1), 1800 (HA2), 1900-2100 (R1A2-3), 2200-0000 (R1R2); φ = 55° 1700-2000 (R2R2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE- no data
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 0
10cm flux: 75
Flare: 10/23.5
Ca: no data
Ip: 0
Ia: 0
Solar Regions
(14017) S10
(14030) N11
14011 N36
Sunspots

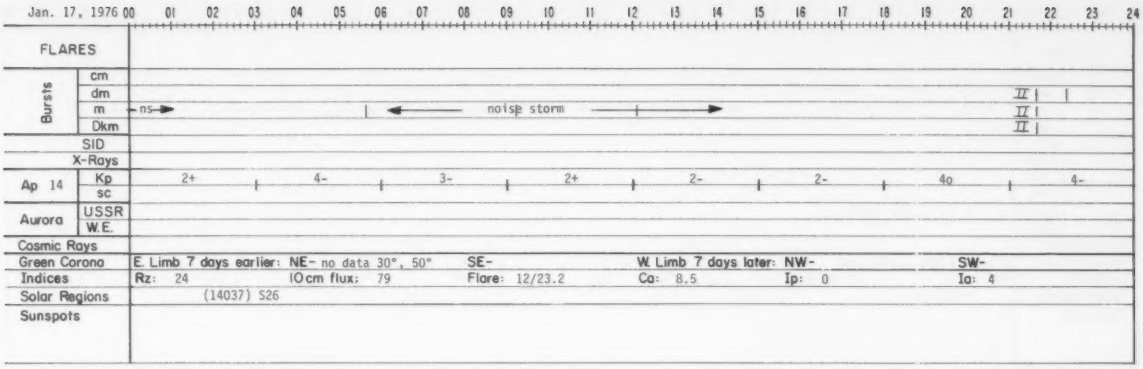

Jan. 12, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/29
1n/29
Bursts
cm
dm
m
ns
ns
ns
Dkm
SID
X-Rays
Ap 13
Kp
4+ 2+ 2+ 2+ 2o 3- 3- 3o
sc
Aurora
USSR
φ = 59° 1700 (R1B1); φ = 60° 1900-2000 (HA2), 2100-2300 (R1R2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE no data
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 20
10cm flux: 80
Flare: 33/20.9
Ca: no data
Ip: 0
Ia: 3
Solar Regions
(14028) S52
14018 S06 (2)
Sunspots

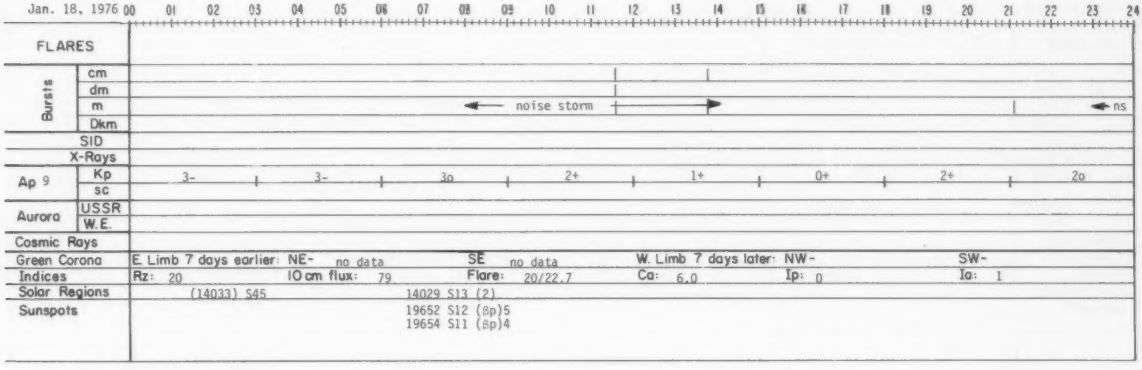

Jan. 13, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 9
Kp
sc
2+ 4- 2o 2- 2- 2- 2o 2o
Aurora
USSR
W.E.
φ = 60° 0300 (HA1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 26 10 cm flux: 83 Flare: 3/24.0 Ca: no data Ip: 0 Ia: 0
Solar Regions
(14031) S36
Sunspots

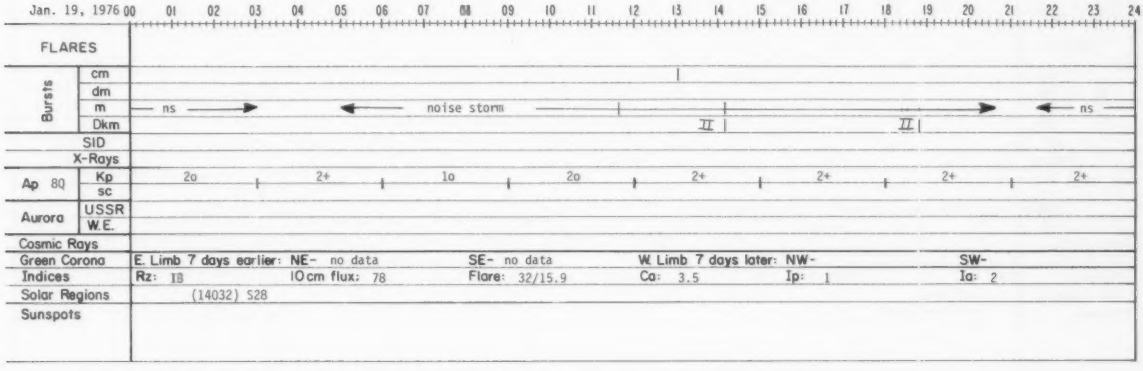

Jan. 14, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap 11
Kp
sc
3- 3- 3o 2+ 3o 2+ 2+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 36 10 cm flux: 85 Flare: 25/23.5 Ca: 6.1 Ip: 0 Ia: 2
Solar Regions
Sunspots

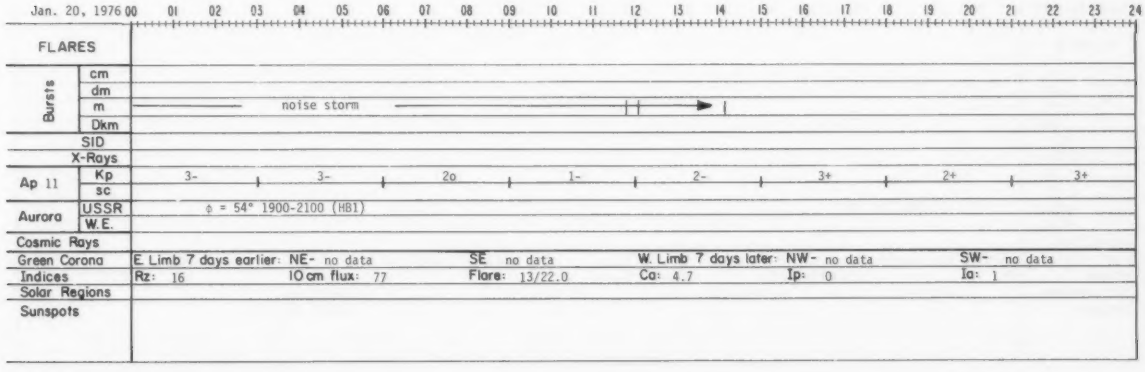

Jan. 15, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 70
Kp
sc
1+ 0o 0o 1- 2o 3o 3- 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices
Rz: 20 10 cm flux: 83 Flare: 14/24.0 Ca: 8.2 Ip: 0 Ia: 4
Solar Regions
(14027) N01 (14036) N28
Sunspots
(19656) S02 (αp)1 CMP Jan. 14


Jan. 16, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
ns
SID
X-Rays
Ap 10
Kp
sc
3o 2o 1+ 1+ 1+ 2+ 3o 4-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 22 10 cm flux: 81 Flare: 6/22.4 Ca: 8.7 Ip: 0 Ia: 3
Solar Regions
Sunspots


Jan. 17, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
II
SID
X-Rays
Ap 14
Kp
sc
2+ 4- 3- 2+ 2- 2- 4o 4-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data 30°, 50° SE- W. Limb 7 days later: NW- SW-
Indices
Rz: 24 10cm flux: 79 Flare: 12/23.2 Ca: 8.5 Ip: 0 Ia: 4
Solar Regions
(14037) S26
Sunspots


Jan. 18, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap 9
Kp
sc
3- 3- 3o 2+ 1+ 0+ 2+ 2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 20 10cm flux: 79 Flare: 20/22.7 Ca: 6.0 Ip: 0 Ia: 1
Solar Regions
(14033) S45 14029 S13 (2)
Sunspots
19652 S12 (βp)5
19654 S11 (βp)4


Jan. 19, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
II
SID
X-Rays
Ap 80
Kp
sc
2o 2+ 1o 2o 2+ 2+ 2+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW-
Indices
Rz: 18 10cm flux: 78 Flare: 32/15.9 Ca: 3.5 Ip: 1 Ia: 2
Solar Regions
(14032) S28
Sunspots


Jan. 20, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 11
Kp
sc
3- 3- 2o 1- 2- 3+ 2+ 3+
Aurora
USSR
W.E.
φ = 54° 1900-2100 (HBI)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 16 10cm flux: 77 Flare: 13/22.0 Ca: 4.7 Ip: 0 Ia: 1
Solar Regions
Sunspots

Jan. 21, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm; dm; m — noise storm; Dkm

SID

X-Rays

Ap 20 — Kp: 3+ | 4o | 3+ | 4- | 3o | 4+ | 3+ | 2o — sc

Aurora — USSR: ϕ = 57° 1500-1900 (HA2) — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- no data; SE- no data; W. Limb 7 days later: NW-; SW-

Indices — Rz: 11; 10cm flux: 74; Flare: 2/21.7; Ca: 3.1; Ip: 0; Ia: 4

Solar Regions — (14034) N19; (14039) S03

Sunspots

Jan. 22, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm; dm; m — noise storm; Dkm

SID

X-Rays

Ap 23D — Kp: 3+ | 5- | 2o | 2o | 4o | 4o | 4+ | 4o — sc

Aurora — USSR: ϕ = 56° 1500-1900 (HA2) — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- no data; SE no data; W. Limb 7 days later: NW- no data; SW- no data

Indices — Rz: 10; 10cm flux: 73; Flare: 0/20.7; Ca: 3.6; Ip: 0; Ia: 4

Solar Regions

Sunspots

Jan. 23, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm; dm; m; Dkm

SID

X-Rays

Ap 20 — Kp: 4+ | 3o | 3+ | 3+ | 4o | 4o | 3- | 3- — sc

Aurora — USSR: ϕ = 49° 1600-1900 (HB1); ϕ = 54° 1900 (R,B1) — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE-; SE-; W. Limb 7 days later: NW-no data 355°, 360°; SW-

Indices — Rz: 10; 10cm flux: 72; Flare: 0/19.4; Ca: no data; Ip: 0; Ia: 4

Solar Regions — (14035) N11

Sunspots — (19657) N10 (B)1

Jan. 24, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES

Bursts: cm; dm; m; Dkm

SID

X-Rays

Ap 21D — Kp: 3- | 3+ | 5- | 4- | 3o | 4- | 3o | 4o — sc

Aurora — USSR: ϕ = 57° 1800-2200 (HP1) — W.E.

Cosmic Rays

Green Corona — E. Limb 7 days earlier: NE- no data; SE no data; W. Limb 7 days later: NW-; SW-

Indices — Rz: 0; 10cm flux: 71; Flare: 0/21.1; Ca: 0.3; Ip: 0; Ia: 5

Solar Regions — (14042) N22; (14052) N04; (14044) S03; (14038) N11

Sunspots — (19658) N09 (αp)1

Jan. 25, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 10	Kp	3o 2o 2o 2o 3+ 3o 2+ 2-
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona	E. Limb 7 days earlier: NE- no data SE- no data	W. Limb 7 days later: NW- SW-
Indices	Rz: 0 10cm flux: 70 Flare: 0/20.2	Ca: no data Ip: 0 Ia: 4
Solar Regions	14043 N11 (14045) S03	(14041) S10
Sunspots		

Jan. 26, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 500	Kp	1- 2+ 1o 2- 2- 2- 1o 1o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona	E. Limb 7 days earlier: NE- no data SE no data	W. Limb 7 days later: NW- SW-
Indices	Rz: 0 10cm flux: 70 Flare: 0/17.1	Ca: 0.7 Ip: 0 Ia: 4
Solar Regions	(14050) N30 (14051) S26	14046 S07
Sunspots		

Jan. 27, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 60	Kp	1o 2- 3o 1+ 1+ 1o 1- 1+
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona	E. Limb 7 days earlier: NE- no data SE- no data	W. Limb 7 days later: NW- SW-
Indices	Rz: 7 10cm flux: 69 Flare: 0/23.9	Ca: 0.6 Ip: 0 Ia: 3
Solar Regions	14047 S05	
Sunspots	19659 S04 (αf)3	

Jan. 28, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 500	Kp	1+ 1o 1+ 2- 1o 1o 1+ 1o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona	E. Limb 7 days earlier: NE- SE	W. Limb 7 days later: NW- SW-
Indices	Rz: 0 10cm flux: 69 Flare: 3/22.3	Ca: 0.7 Ip: 0 Ia: 4
Solar Regions		
Sunspots		

Jan. 29, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 60	Kp	2- | 2+ | 2+ | 1+ | 2- | 1- | 0+ | 1o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices		Rz: 14 10cm flux: 70 Flare: 2/19.1 Ca: 1.3 Ip: 1 Ia: 3
Solar Regions		
Sunspots		

Jan. 30, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 9	Kp	0+ | 0o | 1- | 1- | 2o | 3o | 3+ | 4-
	sc	
Aurora	USSR	ϕ = 57° 1400-1500 (HA1)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices		Rz: 8 10cm flux: 71 Flare: 1/16.9 Ca: 2.6 Ip: 0 Ia: 1
Solar Regions		
Sunspots		

Jan. 31, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 290	Kp	3- | 4+ | 3o | 3o | 5o | 4+ | 4- | 5+
	sc	
Aurora	USSR	ϕ = 57° 1200-1300 (SB1), 1400 and 1500-1600 (R_1B1), 1300-1500 (HB1), 1600-1700 (R_1), 1700-2100 (R_1R2)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices		Rz: 0 10cm flux: 71 Flare: 0/18.7 Ca: 1.5 Ip: 0 Ia: 4
Solar Regions		14048 S11 (14054) N18
Sunspots		

REGIONAL FLARE INDEX

INCLUDES ALL FLARES

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
14009	S 4	76/01/08.0	76/01/01	76/01/01	.96	.96	1
14029	S13	76/01/18.1	76/01/11	76/01/21	166.72	15.16	60
14052	N 4	76/01/24.2	76/01/30	76/01/30	1.18	1.18	1
14047	S 5	76/01/27.8	76/01/29	76/02/02	2.18	.36	3

Note:

Because of differences in method of calculation, the dates of Central Meridian Passage for the McMath Plage Regions vary somewhat from those given elsewhere. Any region not listed here produced mc flares during its disk passage.

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UAG-54 "Catalog of Ionosphere Vertical Soundings Data", prepared by Environmental Data Service, NOAA, Boulder, Colorado 80302, April 1976, 130 pages, price $2.10.

UAG-55 "Equivalent Ionospheric Current Representations by a New Method, Illustrated for 8-9 November 1969 Magnetic Disturbances", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, H. W. Kroehl, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, M. Kanamitsu, Advanced Study Program, National Center for Atmospheric Research, Boulder, Colorado 80303, J. H. Allen, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, and S.-I. Akasofu, Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, April 1976, 91 pages, price $1.60.

UAG-56 "Iso-intensity Contours of Ground Magnetic H Perturbations for the December 16-18, 1971 Geomagnetic Storm", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701 (currently Guest worker at Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302), April 1976, 37 pages, price $1.39.

UAG-57 "Manual on Ionospheric Absorption Measurements", edited by K. Rawer, Institut für Physikalische Weltraumforschung, Freiburg, G.F.R., June 1976, 202 pages, price $4.27.

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